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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/706,651

11/12/2003

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15436.186.2

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7590

03/06/2006

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EXAMINER

STEIN, JAMES D

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 03/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/706,651	ARONSON ET AL.	
	Examiner	Art Unit	
	James D. Stein	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) ²⁵1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is responsive to the arguments filed 12/16/05, which have been fully considered and entered. New claim 25 has been added. Claims 1-25 are pending in the application.

Response to Arguments

Applicant's arguments filed 12/16/05 with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 9, 10, 12, 13, 15, 18 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by [USPUB 2001/0004414] to Kuhn et al. ("Kuhn"), which discloses a related optical device.

With regard to claim 9, at least fig. 6 of Kuhn shows an optical device adapted to receiving an optical fiber 3 having a core 7 through which optical signals propagate, the optical device comprising: a housing 1 comprising a ferrule 3 having the optical fiber 7 connected thereto and a base (left side of housing) configured to receive the ferrule 2; and a first optical

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component 12 having a first and a second facet, the second facet being parallel to the first facet (¶0023), the first optical component 12 held within the base and positioned so that the first facet abuts a terminal end of the optical fiber 7 when the ferrule 3 is received in the base 2, the first optical component 12 having a diameter that is greater than the a diameter of the core of the optical fiber 7 (see fig. 6, ¶'s 0019-0023).

With regard to claim 10, in addition to the rejection of claim 9 previously discussed above, fig. 6 shows the base (right side) comprising a port 4 configured to receive a second optical device 5 therein.

With regard to claim 12, in addition to the rejection of claim 10 previously discussed above, fig. 6 shows the base to further comprise an air gap regions 11/4 disposed between the first component 12 and the second component 5.

With regard to claim 13, in addition to the rejection of claim 10 previously discussed above, Kuhn teaches the second optical component 5 to be a transmitter (¶0021). Because said transmitter 5 is a separate module that plugs into port 4, it can therefore be considered "sub-assembly" as claimed by applicant.

With regard to claim 15, in addition to the rejection of claim 9 discussed above, fig. 6 of Kuhn shows the optical component 12 to have an optical axis perpendicular to a facet formed at the terminal end of fiber 7.

With regard to claims 18 and 19, in addition to the rejection of claim 9 previously discussed above, fig. 6 of Kuhn shows lip 14 disposed around the periphery of a mounting region for holding the first optical component 12 within a portion of a port formed in the housing (portion immediately to the left of recess 11).

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Claims 9 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by [USPAT 6,663,296] to the Blair reference of record.

With regard to claim 9, fig.11 of Blair shows an optical device adapted to receiving an optical fiber 714 having a core 715 through which optical signals propagate, the optical device comprising: a housing comprising a ferrule 720 having the optical fiber 715 connected thereto and a base 760 configured to receive the ferrule 720; and a first optical component 750 having a first and a second facet, the second facet being parallel to the first facet, the first optical component 750 held within the base and positioned so that the first facet abuts a terminal end of the optical fiber 714 when the ferrule 720 is received in the base 760, the first optical component 705 having a diameter that is greater than the a diameter of the core 715 of the optical fiber 714.

With regard to claim 15, in addition to the rejection of claim 9 over Blair discussed above, fig. 11 shows the axis of the optical component 750 to be perpendicular to a facet formed at the terminal end of the fiber.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuhn.

With regard to claim 11, in addition to the rejection of claim 10 previously discussed above, fig. 6 shows an air gap 11/4 ("region" as claimed by applicant) in between the first 12 and

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second 5 optical components. Therefore, the claimed invention has been disclosed except for said first optical element 12 to have a refractive index higher than that of the region. However, Kuhn, teaches the first element 12 is taught to be an optically transmissive lens element (see entire document, at least ¶¶ 0002, 0007, 0008). Since lenses are known to be made of glass, it would have been obvious at the time of the invention to one of ordinary skill in the art to make said first element 12 of glass so that it functions as a lens and allows light to pass therethrough as taught. Glass is known to inherently have a refractive index higher than that of air, as claimed by applicant.

With regard to claims 16-17, in addition to the rejection of claim 9 previously discussed above, the claimed invention has been disclosed except for the optical component 12 to have a thickness of less than 2mm or less than 1mm. Kuhn does not teach a specific thickness. However, it would have been obvious at the time of the invention to one of ordinary skill in the art to choose the optical element to be any desired thickness based on the intended use of the device requiring the fiber 7 to be spaced at varying distances from the transmitter 5. It has been held that discovering an optimum value or range of values involves only routine skill in the art (In re Boesch, 617 F.2d 272, 205 USPQ 215 and In re Aller, 105 USPQ 233). It is noted that a specific value or range of values is not patentable unless it produces unexpected results. To the extent applicant does not believe that determining the above-mentioned thicknesses involves only routine skill in the art, see the additional rejections of claims 16 and 17 below.

Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuhn as applied to claim 10 above, and further in view of the Tonai reference of record. The claimed invention has been disclosed and previously discussed above except for the transmitter sub-

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assembly 5 to comprise a laser transmitter. Tonai discloses a related optical device contained within a housing wherein a light-emitting sub-assembly 9 is further comprises a semiconductor laser element 9c, and a lens 9e. "By way of the lens 9e, the semiconductor light-emitting device 9c is optically coupled to an optical fiber inserted into the sleeve 8 [¶0049]." Such functionality requires said lens 9e "to be in optical communication with the laser transmitter," as claimed by applicant. Furthermore, lens 9e functions such that "light from a light-emitting device 9a is incident on an end of the optical fiber [¶0048]," which is analogous to focusing "electromagnetic radiation upon the terminal end of the fiber," as claimed by applicant. It would have been obvious at the time of the invention to one of ordinary skill in the art to modify Kuhn such that the transmitter subassembly 5 of Kuhn included a laser as taught by Tonai in order to permit optical signals to be transmitted from an electronic communications device to the optical fiber 7.

Claims 1-8, 16, 17 and 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuhn as previously discussed above, and further in view of [JP358121001] to Shirasaki.

With regard to claims 1-8 and 20-25, the claimed invention has been disclosed by Kuhn and was previously discussed except for the optical component having a first facet and a second facet disposed from a terminal end of the optical fiber a distance that enables the optical signals which are internally reflected within the optical component to be substantially prevented from entering into the terminal end of the fiber. This distance can effectively be called the *thickness* of the optical component, as the terminal end of the fiber 7 is abutting the optical component 12 of Kuhn.

Fig. 2 of Shirasaki shows the terminal end of an optical fiber 11 abutting a first end of an optical element 12 (glass plate), the optical element having a second facet disposed a distance

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(about 1mm-10mm, abstract) from the terminal end of the fiber 11 such that light that is internally reflected (dotted arrows) is prevented from entering, or returning into the terminal end of the fiber 11 (see fig. 2). Shirasaki teaches that this arrangement prevents the generation of noise (abstract). Therefore, it would have been obvious at the time of the invention to ensure the second facet of the optical component of Kuhn was disposed a distance from the terminal end of the optical fiber (i.e. thickness of optical component, as mentioned above) such that internally reflected light did not substantially enter the terminal end of the optical fiber in order to prevent the generation of noise and improve performance of the device. In the present case, one would have been motivated to choose a distance (thickness of the optical component) in the suggested working range of around 1mm to around 10mm taught by Shirasaki (abstract).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James D. Stein whose telephone number is (571) 272-2132. The examiner can normally be reached on M-F (8:00am-4:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

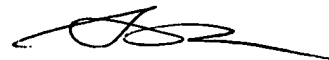
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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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PRIMARY EXAMINER